

## SEQUENCE LISTING

**SEQ ID NO:1**

human CNG3B amino acid sequence

5 MFKSLTKVKNVKPIGENNENEQSSRRNEEGSHPSNQSQQTAAQEENKGEEKSLKTKSTPVT  
 BEPHNTNIQDKLSKKNSGGDLTNPDPQNAAEPTGTVPBEKEMDPGKEGPNSPQNKPPAAPVI  
 NEYADAQLHNLVKRMQRRTALYKKKLVEGDLSSPEASPTAKPTAVPPVKESDDKPTHEHYR  
 LLWFVKVKMPLTEYLKRIKLPSNIDSYTDRLYLLWLLVTLAYNWNCFIPLRLVFPYQTAD  
 10 NIHYWLIADIICDI IYLYDMLFIQPRLQFVRGGDIIVDSNELRKHYRTSTKFLQDVASIIFF  
 DICYLFFGFNPMFRANRLKYTSFFEFNHHELSIMDKAYIYRIVRTTGYLLFILHINACVYF  
 WASNYEGIGTTRWVYDGBGNEYLRCYYWAVRTLITIGGLPEPQTLFEIVFQLLNFFSGVVFV  
 SSLIGQMRDVIGAATANQNYFRACMDDTIAYMNNYSIPKLVQKRVRTWYEBYTWDSQRMLED  
 DLLKTLPTTVQLALAIIDVNFSSII SKVDLFGKCDTQMIYDMLLRKLSVLYLPDGFVCKKGEIG  
 15 KEMYIIKHGEVQLGGPDGTVKLVTLKAGSVFGEISLLAAGGNNRRTANVVAHGFANLLTLD  
 KKTQLQEIIVHYPDSERILMKARVLLKQKAKTAEATPPRKDLALLFPPEKETPKLFTLLGG  
 TGKASLARLLKLKREQAAQKKENSEGGEENEDKQKENEDKQKENEDKQKENEDKQKENEDKQKGR  
 EPEEKPLDRPECTASPIAVEEPEHPSVRRTVLPRTGTSRQSLII SMAPSABEGGEBVLTVIEVKEK  
 AKQ

**SEQ ID NO:2**

complete human CNG3B nucleotide sequence

25 CATTTCCTACCTTAAGGCACAGTCATAAAACAGAGGGTTCCTCAGAACACCTCAGAGAAGATG  
 TTTAAATCGCTGACAAAAGTCAACAAGGTGAAGCCTATAGGAGAGAACATGAGAATGAACAAAG  
 TTCTCGTCGGAATGAAGAAGGCTCTCACCCAAGTAATCAGTCTCAGCAAAACACAGCAGAGGAAG  
 AAAACAAAGGTGAAGAGAAATCTCTCAAAACCAAGTCAACTCCAGTCACGCTCTGAAGAGCCACAC  
 ACCAACATACAAGACAAACTCTCCAAGAAAAATTCCTCTGGAGATCTGACCACAAACCTTGACCC  
 TCAAAATGCAGCAGAACCAACTGGAACAGTGCCAGAGCAGAAGGAAATGGACCCCGGGAAGGAAG  
 30 GTCCAAACAGCCCAACAAACCAACCGCCTGCAGCTCCTGTTATAAATGAGTATGCGCCAGC  
 CTACACAACTGGTGAAAAGAAATGCGCTCAAAGACAGCCCTCTACAAAGAAAAGTTGGTAGAGGG  
 AGATCTCTCTCACCCGAGCCAGCCCAAACTGCAAGGCCACCGCTGTACCACAGTAAAG  
 AAAGCGATGATAAGCCAAACAGAACATTACTACAGGCTGTTGTGGTTCAAAGTCAAAAAGATGCCT  
 TTAACAGATGACTTAAAGCGAATTAACCTTCCAACAGCATAGATTATACACAGATCGACTCTA  
 35 TCTCCTGTGGCTCTTGCTTGCTACTCTTGCCCTATACTGGAACCTGCTGTTTATACCACTGCGCC  
 TCGTCTTCCCATATCAAAACCGCAGACACATACACTACTGGCTTATTGCGGACATCATATGTGAT  
 ATCATCTACCTTTATGATATGCTATTTATCCAGCCAGACTCCAGTTTGTAAAGAGGAGGACAT  
 AATAGTGGATTCAATGAGCTAAGGAAACATACAGGACTCTACAAAAATTTAGTTGGATGTCG  
 CATCAATAATACCATTTGATATTGCTACCTCTTCTTTGGGTTTAACTCCAATGTTTAGAGCAAAAT  
 40 AGGATGTTAAAGTACACTTCATTTTGAATTTAATCATCACTACCTAGAGTCTATAATGGACAAAGC  
 ATATATCTACAGAGTTATTGCAACAACTGGATACCTGCTGTTTATTCTGCACATTATATGCTGTG  
 TTTATTACTGGGCTTCAAACATGAAAGGAATGGCACTACTAGATGGGTGATGATGGGAAGGA  
 AAGCATGATCTGAGATGTTATTATTGGGCAGTTCGAACCTTAATTAATGATTTGGTGGCCTTCAGA  
 ACCACAACTTTATTTGAAATGTTTTCAACTCTTGAATTTTTTTCTGAGATTTTTGTGTCT  
 45 CCAGTTTAATTGGTCAGATGAGAGATGTGATTGGAGCAGCTACAGCCAATCAGACTACTCCGC  
 GCCTGATGGATGACACCATTTGCCATACATGAACAATTACTCCATTCTCAAACCTGTGCAAAAGCG  
 AGTTCCGAGCTTGATGATATACATGGGACTCTCAAAGAATGCTAGATGAGTCTGATTGCTTTA  
 AGACTTACCACTACGCTCCAGTTAGCCCTCGCCATTGATGTGAACCTCAGCATCATCAGCAATA  
 GTCGACTTGTTCAGGGTGTGATACAGATGATTTATGACATGTTGCTAAGATTGAATCCGTT

TCCTCTATTGCGCTGGTGACTTTGTCTGCAAAAAGGGAGAAAATTGGCAAGGAAATGTATATCATCA  
 AGCATGGAGAAGTCCAAGTTCTTGGAGGCCCTGATGGTACTAAAAGTTCTGGTTACTCTGAAAGCT  
 GGGTCGGTGTGTTGGAGAAATCAGCCTTCTAGCAGCAGGAGGAGAAACCGTCGAAGTCCCAATGT  
 GGTGGCCACGGGTTTGCCAATCTTTAACTCTAGACAAAAGACCCCTCCAAGAAATTTCTAGTGC  
 5 ATTATCCAGATTCTGAAAGGATCCTCATGAAGAAAGCCAGAGTGCTTTTAAAGCAGAAGGCTAAG  
 ACCGCAGAAGCAACCCCTCCAAGAAAAGATCTTGCCCTCCTCTCCACCGGAAGAGAGACACC  
 CAAACTGTGTTAAACCTCTCCTAGGAGGCACAGGAAAAGCAAGTCTTGACAGACTACTCAAATGA  
 AGCGAGAGCAAGCAGCTCAGAAGAAGAAAATTTCTGAAGGAGGAGGAAGGAAAAGAAAATGA  
 GAAGATAAACAAGAAAATGAAGATAAACAAGAAAATGAAGATAAAGGAAAAGAAAATGA  
 10 AGATAAAGATAAAGGAAGAGAGCCAGAAGAGAGCCACTGGACAGACCTGAATGTACAGCAAGTCT  
 CTATTGCAGTGGAGGAAGAACCCCACTCAGTTAGAAGGACAGTTTACCCAGAGGGACTTCTCGT  
 CAATCACTCATTATCAGCATGGCTCCTTCTGCTGAGGGCGGAGAAGAGGTTCTTACTATTGAAGT  
 CAAAGAAAAGGCTAAGCAATAAATGTTTGATTATCTTTAGATGTGATATAGCTAGTTCCCAAAGT  
 GATTGTACCTAGGATTGTAACTTAAATTAACGAGGGGAAACGACATGCTGGGACCCCTTGAGAAAC  
 15 GAAAGGCAATCCTAGCTTAGTTCTAGGACTTATCTGAGAGTGTGATTTCATGCAGTGGTAAT  
 AAGAAGATTATTAAAAGCAAAAAAAAAAAAAAAAAAAAAA

### SEQ ID NO:3

human CNG3B coding sequence

ATGTTTAAATCGCTGACAAAAGTCAACAAGGTGAAGCCTATAGGAGAGAACAAATGAGAATGAACA  
 ATGTTCTCGTCGGAATGAAGAAGGCTCTCACCCAAGTAATCAGTCTCAGCAAAACACAGCAGG  
 AAGAAAACAAAGGTGAAGAGAAATCTCTCAAACCAAGTCAACTCTCAGTCAAGTCTGTAAGAGCCCA  
 25 CACACCAACATACAAGACAACTCTCCAAGAAAAATTCCTCTGGAGATCTGACCACAAAACCCCTGA  
 CCGTCAAATATGCAGCAGAACCACTGGAACAGTGCAGAGCAGAGAAATGGACCCCGGGAAG  
 AAGGTCCAAACAGCCCAAAAACAAACCGCTGACAGTCTCTGTTATAAATGAGTATGCCGATGCC  
 CAGCTACACAACCTGGTGAAGAAATGCGTCAAAGAACAGCCCTCTACAAGAAAAGTTGGTAGA  
 GGGAGATCTCTCTCACCAGGAGCCAGCCCAAACTGCAAGGCCACGGCTGTACCACAGTAA  
 30 AAGAAGCGATGATAAGCCAACAGAACATTACTACAGGCTGTTGTGGTTCAAAGTCAAAAAGATG  
 CCTTTAACAGAGTACTTAAAGCGAATTAAACTTCCAACAGCATAGATTCTACACAGATCGATC  
 CTATCTCCTGTGGCTCTTGCTGTGCACTCTTGCTATAAATGGAAGTCTGCTGTTATACCACTGC  
 GCCTCGTCTTCCCATATCAAACCGCAGACAAATACACTACTGCTCTATTGCGGACATCATATGT  
 GATATCATCTACTCTTATGATATGCTATTATCCAGCCAGACTCCAGTTTGTAGAGGAGGAGA  
 35 CATAAATAGTGGATTCAAATGAGCTAAGGAAACACTACAGGACTTCTACAAAATTTCAAGTTGGATG  
 TCGCATCAATTAATACCAATTTGATATTGCTACCTCTCTTTGGGTTTAATCCAATGTTTAGAGCA  
 AATAGGATGTTAAAGTACACTTCATTTTGAATTTAATCATCACCTAGAGTCTATAATGGACAA  
 AGCATATATCTACAGAGTTATTGCAACAAGTGGATCTGCTGTTTATTCTGCACATTAATGCCCT  
 GTGTTTATTAATCGGCTTCAAACATGAAGGAATGGCACTAGATGAGTGTATGAGTGGGAGA  
 40 GGAACAGGATATCTGAGATGTTATTATGGGCAGTTGCAACTTTAATACCAATTTGGTGGCCCTCC  
 AGAACCAAACTTTTATGAAATTTGTTTTCAACTCTTGAAATTTTCTGAGATTTTGTGAT  
 TCTCCAGTTTAATTTGGTCAGATGAGAGATGTGATTGGAGCAGCTACAGCCAATCAGAACTACTTC  
 CGCGCTTGCATGATGACACCATTTGCTACATGAACAATTACTCCATTCTCTAACTTTGTGCAAAA  
 GCGAGTTTCGAGTCTGATGATGAATATACATGGGACTCTCAAAGAAATGAGATGAGTCTGATTTCG  
 45 TTAAGACCTTCAACTACCGTCCAGTTAGCCCTCGCATTGATGTGAACCTCAGCATCATCAGC  
 AAAGTCAATTTGCTAAGGTTGTGATACACAGATGATTATGACATGTTGCTAAGATTGAATTC  
 CGTTCTCTATTTCGCTGGTGACTTTGTCTGCAAAAAGGGAGAAAATGGCAAGGAAATGTATATCA  
 TCAAGCATGAGAGAAGTCCAAGTTCTTGGAGGCCCTGATGGTACTAAAGTCTGCTGTACTCTGAAA  
 GCTGGGTGGTGTGTTGGAGAAATCAGCCTTCTAGCAGCAGGAGGAGAAACCGTCAAGTCTGCAA  
 50 TGTGGTGGCCACGGGTTGCAATCTTTAACTCTAGACAAAAGACCCCTCCAAGAAATTTCTAG  
 TGCATTATCCAGATTCTGAAGAGTCTCATGAAGAAAGCCAGAGTGCTTTTAAAGCAGAAGGCT

AAGACCGCAGAAGCAACCCCTCCAAGAAAAGATCTTGCCCTCCTCTTCCCACCGAAAGAAGAGAC  
 ACCCAAACCTGTTTAAACCTCTCTAGGAGGCACAGGAAAAGCAAGTCTTGCAAGACTACTCAAAT  
 TGAAGCGAGAGCAAGCAGCTCAGAAGAAAAGAAATTCGAGGAGGAGAGGAAGAAGGAAAAGAA  
 AATGAAGATAAA CAAAAGAAAATGAAGATAAA CAAAAGAAAATGAAGATAAAGGAAAAGAAA  
 TGAAGATAAAGATAAAGGAAGAGGCCAGAAGAGAAGCCACTGGACAGACCTGAATGTACAGCAA  
 GTCTTATGCAGTGGAGGAAGAACCCCACTCAGTTAGAAGGACAGTTTACCCAGAGGGACTTCT  
 CGTCAATCACTCATTATCAGCATGGCTCCTTCTGCTGAGGGCGGAGAAGAGGTTCTTACTATTGA  
 AGTCAAAGAAAAGGCTAAGCAATAA

10

**SEQ ID NO:4**

Oligo 1 (sense strand primer)

TCTATCTCCTGTGGCTCTTGCTTGTC

15

**SEQ ID NO:5**

Oligo 2 (antisense strand primer)

GAGTCTGGGCTGGATAAATAGCATATC

20

**SEQ ID NO:6**

Oligo 3 (sense strand primer)

25

AGGAATTGGCACTACTAGATGGGTG

**SEQ ID NO:7**

30 Oligo 4 (antisense strand primer)

TTCATGAGGATCCTTTCAGAATCTGG

35 **SEQ ID NO:8**

Oligo 5 (sense strand primer)

GGAAACCGTCGAACTGCCAATGTGGT

5 **SEQ ID NO:9**

Oligo 6 (sense strand primer)

CGGGTTTGCCAATCTTTTAACTCTAGAC

10

**SEQ ID NO:10**

Oligo 7 (antisense strand primer)

GTCCGCAATAAGCCAGTAGTGTATG

15

**SEQ ID NO:11**

Oligo 8 (sense strand primer)

20 TGACAAGCTTCCGCCATGTTTAAATCGCTGACAAAAGTC

**SEQ ID NO:12**

Oligo 9 (antisense strand primer)

25

TGACGAATTCTCCCAGCATGTCGTTTCCCCTCGTTAA